NEW FRONTIERS PROGRAM
Community announcement, May 12, 2008

The National Aeronautics and Space Administration (NASA) Science Mission Directorate (SMD) plans to release for community comment a draft Announcement of Opportunity (AO) for the third New Frontiers mission (NF-3) in September 2008. Approximately two weeks after the draft is released, SMD will hold a community workshop in the Washington, D.C., area. The final AO will be released in December 2008 with proposals due approximately 90 days later. In August 2009, up to three missions will be selected for a 9 to 11 month Phase A that will be funded up to $2.5M each. Downselection to a single mission for flight will occur in fall (September to November) 2010. Launch is to occur no earlier than 2015 and no later than 2018. This NF-3 AO will solicit only missions that do not require nuclear sources for power generation or propulsion, although Radioisotope Heating Units (RHUs) and calibration sources will be allowed. The Principal Investigator (PI) Mission Cost for all phases of the mission will not include the launch vehicle and will be capped at $650M in FY09 dollars.

An Evolved Expendable Launch Vehicle (EELV) in the Intermediate Class with any of the fairing sizes available will be provided by NASA as Government Furnished Equipment (GFE) at no charge against the capped PI Mission Cost. The Intermediate Class EELV that NASA will provide can deliver up to 5,300 kg to an orbit with a launch energy of C_3=10 km^2/sec^2. Standard launch services will also be provided as GFE. Special or mission unique launch services above those included in the standard launch services must be included within the PI Mission Cost.

No minimum experience qualifications will be required of the PI, but the experience and expertise of the proposing team will be an evaluation factor for the evaluation of submitted NF proposals. With the cancellation of minimum PI experience requirements, NASA has terminated prescreening for compliance with the cancelled requirements.

NASA will follow recommendations 1 and 2 of the National Research Council's (NRC's) New Opportunities for Solar System Exploration (NOSSE) committee report available at: http://books.nap.edu/catalog.php?record_id=12175.

Recommendation 1: In drafting the rules for the NF-3 AO, NASA should emphasize the science objectives and questions to be addressed, not specify measurements or techniques for the implementation.

Recommendation 2: NASA should expand the list of potential missions in the NF-3 AO to include the three remaining candidate missions: South Pole-Aitken Basin Sample Return, Venus In Situ Explorer, and the Comet Surface Sample Return, and also the five additional medium-sized missions mentioned in the decadal survey: Network Science; Trojan/Centaur Reconnaissance; Asteroid Rover/Sample Return; Io Observer; and Ganymede Observer. There is no recommended priority for these missions. NASA should select from this set of missions based both on science priority and overall mission viability.

This NF-3 AO will not provide a funding profile. Proposals are to propose the optimum funding profile for the mission consistent with the cap on PI Mission Cost and are to specify the duration and budget requirements for Phases B through F (Closeout).

The cost of using the Deep Space Network (DSN) must be included within the PI Mission Cost. Except for emergencies and critical events (e.g., Entry, Descent, and Landing) when continuous coverage is required, DSN use will be limited to a single 34 m DSN antenna at a time. Missions are encouraged to consider the use of Ka band as appropriate.

Proposers will be given the option of selecting none or one of two specific technologies for insertion into their mission. The two technologies are the NASA Evolutionary Xenon Thruster (NEXT) and the Advanced Materials Bipropellant Rocket (AMBR) engine. For missions that insert NEXT, the cap on the PI Mission Cost will be raised up to $15M. For missions that insert AMBR, the cap on the PI Mission Cost will be raised up to $5M. The appropriate use of these technologies will be evaluated and could affect the risk rating of the proposals. However, the inherent risk of these technologies has been accepted by NASA and will not affect the evaluated risk rating of the proposals; all proposers will receive feedback on the use of the new technology. Once that feedback has been incorporated into the Concept Study Reports (CSRs) of the missions selected for Phase A, both the appropriate use and the inherent risk of these technologies will be evaluated and could affect the risk rating of the CSRs. Any PI considering the use of either of these technologies should contact David J. Anderson of NASA Glenn Research Center at david.j.anderson@nasa.gov.

The cost of complying with the National Environmental Policy Act (NEPA) for RHUs and calibration sources must be included within the PI Mission Cost.

Proposals must not designate an Education and Public Outreach (E/PO) lead or describe an E/PO plan. Designation of an E/PO lead and development of an E/PO plan is to be done during Phase A. Proposals must allocate a budget for E/PO that does not exceed 1% of the PI Mission Cost and proposals must contain a commitment by the PI to provide an E/PO plan if selected.

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